

REMARKS

In the Office Action dated March 3, 2009, the Examiner rejects claims 1, 5-7, 10, 13 and 16 under 35 U.S.C. §102(b) as being anticipated by Kazuo (JP 2000-239738) and rejects claims 8, 9, 12, 14 and 15 under 35 U.S.C. §103(a) as being unpatentable over Kazuo in view of Saburo et al. (JP 2003-286517).

In response, Applicants amend claims 1 and 10. Claim 13 is canceled with this amendment, while claims 2-4 and 11 were previously canceled. No new claim is added. Applicants respectfully request reconsideration of the application as amended.

Applicants traverse the rejections of claims 1 and 5-7 under 35 U.S.C. §102(b) as being anticipated by Kazuo. Claim 1 describes the applying oscillations to the cooling liquid with an oscillation device horizontally and reciprocally moving in the cooling liquid. The rejection of claim 1 states that Kazou discloses that the position between the oscillating generating means of Kazou and the work piece is adjustable in order to remove vapor film efficiently, and the rejection further asserts that the position between the oscillating generating means and the work piece being adjustable discloses an oscillation device horizontally and reciprocally moving in the cooling liquid. (P. 3 of the Action.) However, the position between the oscillating generating means 7 of Kazou and the work piece W being adjustable does not disclose a direction in which the oscillating generating means 7 moves. Instead, the position between the oscillating generating means 7 of Kazou and the work piece W being adjustable merely discloses that the location at which the oscillating generating means 7 is attached in the quenching tub 1 can be adjusted. Indeed, ¶ [0011] of Kazou states, "it is not necessary to arrange said oscillating generating means in the predetermined location in said *quenching tub*." (Emphasis added.) Thus, the adjustable location of the oscillating generating means 7 makes no disclosure regarding the direction in which the oscillating generating means 7 oscillates. Furthermore, Kazou explicitly states that its oscillating generating means 7 is movable "up and down". (See, e.g., ¶ [0022] of Kazou.) Since the position between the oscillating generating means 7 of Kazou being adjustable does not disclose

anything about the direction in which the oscillating generating device 7 moves, and since Kazou explicitly states that the oscillating generating device 7 moves up and down, Kazou does not disclose an oscillation device horizontally and reciprocally moving in cooling liquid as described in claim 1.

Claim 1 is further traversed because the rejection does not address all the features of claim 1. For example, claim 1 describes applying oscillations to the cooling liquid with an oscillation device *and* a stirrer separately arranged in the cooling liquid. Kazou, however, does not disclose an oscillation device and a stirrer separately arranged in cooling liquid as described in claim 1. As another example, claim 1 describes changing a pressure applied to a liquid surface level of the cooling liquid *by introducing a gas therein via a gas introduction pipe*. The rejection, however, merely states that repeatedly varying pressure in the form of a three dimensional wave would inherently result in a change of pressure applied to the liquid level without mention a gas introduced via a gas introduction pipe as described in claim 1. Yet, Kazou does not disclose any gas introduction pipe as described in claim 1. Regardless, Applicants also amend claim 1 to clarify that the pressure is applied to a liquid surface level of the cooling liquid by introducing a gas above the liquid surface level via a gas introduction pipe. Kazou does not disclose any introducing a gas above a liquid surface level as described in claim 1 as amended.

Since Kazou does not disclose the cooling method described in claim 1, claim 1 and its dependent claims 5-7 are allowable over Kazou.

The Examiner rejects claims 8 and 9 under 35 U.S.C. §103(a) as being unpatentable over Kazuo in view of Saburo et al. Claims 8 and 9 also include the features of claim 1, and Saburo et al. fails to cure the deficiency of Kazou. For example, Saburo et al. does not disclose either applying oscillations with an oscillation device horizontally and reciprocally moving in a cooling liquid or changing a pressure applied to a liquid surface level by introducing a gas above the liquid surface level as included in claims 8 and 9 as a result of their dependency from claim 1. Therefore, claims 8 and 9 are allowable over Kazuo in view of Saburo et al.

Applicants amend claim 10 to overcome the rejection under 35 U.S.C.

§102(b) as being anticipated by Kazuo. Claim 10 as amended describes the step of applying the pressure to the vapor film so that the pressure repeatedly varies as including one of 1) applying horizontal oscillations to the cooling liquid by reciprocally moving an oscillating device in a horizontal direction, 2) repeatedly changing a pressure to be applied to a liquid surface level of the cooling liquid by introducing gas above the liquid surface level, and 3) a combination of applying the horizontal oscillations to the cooling liquid by reciprocally moving an oscillating device in a horizontal direction and changing the pressure to be applied to the liquid surface level of the cooling liquid by introducing gas above the liquid surface level. As explained above in respect of claim 1, Kazuo only discloses that the oscillating generating means 7 can move up and down (see, e.g., ¶ [0022] of Kazuo), and therefore does not disclose reciprocally moving an oscillating device in a horizontal direction as described in claim 10 as amended. Additionally, Kazuo does not disclose introducing gas above the liquid surface level as described in claim 10 as described in amended claim 10. Therefore, amended claim 10 is allowable over Kazuo.

Applicants also traverse the rejections of claims 12, 14 and 15. The Examiner rejects claims 12, 14 and 15 under 35 U.S.C. §103(a) as being unpatentable over Kazuo in view of Saburo et al. Each of these claims includes the features of claim 10 as a result of the dependency of claims 12, 14 and 15 from claim 10, and Saburo et al. does not remedy the failings of Kazuo. For example, Saburo et al. does not disclose reciprocally moving an oscillating device in a horizontal direction or introducing gas above a liquid surface level as included in each of claims 12, 14 and 15 as a result of their dependency from claim 10. As a result, claims 12, 14 and 15 are allowable over the cited references. Moreover, neither Kazuo nor Saburo et al. discloses the features of claims 14 and 15, as neither of Kazuo and Saburo et al. disclose introducing or exhausting a gas as described in the respective claims. Saburo et al. includes a jet stirrer 20, but Saburo et al. implies that the jet stirrer introduces fluid into the cooling pool 2. For example, ¶ [0022] of Saburo et al. states that the jet can include a pump and can be used instead of a current plate 5

which prepares liquid flow 4, thereby implying that the jet stirrer 20 produces a liquid, not gas, flow. Further, Saburo et al. makes no mention of a gas. Therefore, it appears that the jet stirrer 20 of Saburo et al. introduces liquid, not gas, into the cooling pool. As a result, in addition to their dependency from claim 10, claims 14 and 15 are allowable over the cited reference.

Applicants traverse the rejection of claim 16 under 35 U.S.C. §102(b) as being anticipated by Kazuo. Claim 16 describes applying oscillations to the cooling liquid with an oscillation device horizontally and reciprocally moving in the cooling liquid and changing the pressure applied to the liquid level of the cooling liquid. Kazuo, as explained above in respect to claim 1, does not disclose an oscillation device horizontally and reciprocally moving in a cooling liquid. Instead, the oscillating generating means 7 of Kazuo moves up and down. (¶ [0022] of Kazuo.) Therefore, claim 16 is allowable of Kazuo.

Applicants submit that this Amendment is suitable for entry after a final rejection because it adds no new claims, reduces issues for appeal and places the claims in better form for allowance. Applicants further submit that the changes require no additional consideration because they merely clarify language previously recited in the claim.

It is respectfully submitted that this Amendment traverses and overcomes all of the Examiner's rejections to the application as originally filed. It is further submitted that this Amendment has antecedent basis in the application as originally filed, including the specification, claims, and drawings, and that this Amendment does not add any new subject matter to the application. Reconsideration of the application as amended is requested. It is respectfully submitted that this Amendment places the application in suitable condition for allowance; notice of which is requested.

Application Serial No. 10/593,360
Date May 29, 2009
Reply to Office Action dated March 3, 2009

Page 9 of 9

If the Examiner feels that prosecution of the present application can be expedited by way of an Examiner's amendment, the Examiner is invited to contact the Applicant's attorney at the telephone number listed below.

Respectfully submitted,

YOUNG BASILE HANLON
MACFARLANE & HELMHOLDT, P.C.

A handwritten signature in black ink, appearing to read 'E. Macfarlane', is written over a horizontal line.

Evan H. Macfarlane (Reg. No. 62,716)
Attorney for Applicant(s)
(248) 649-3333

Dated: May 29, 2009

Young Basile Hanlon
MacFarlane & Helmholdt, P.C.
3001 West Big Beaver Rd., Suite 624
Troy, Michigan 48084-3107